

generating an alarm signal when the total number of defects in a specific one of the core classes is equal to or greater than a first predetermined number.

18. (Amended) A computer-readable medium bearing instructions for automatically classifying defects [a defect] on the surface of an article, said instructions, when executed, being arranged to cause one or more processors to perform the steps of:

imaging the surface; [and]
classifying each of the defects [the defect] as being in one of a predetermined number of invariant core classes of defects;
determining a total number of defects in each of the core classes; and
generating an alarm signal when the total number of defects in a specific one of the core classes is about equal to or greater than a first predetermined number.

Claim 25, please delete underlining.

37. (Amended) An apparatus for classifying defects [a defect] on the surface of an article, comprising:

an imager to produce an image of the defect and a reference image;
a storage device to store the defect image and the reference image;
a comparator to compare the defect image and the reference image; [and]
a processor to classify the defect as being in one of a predetermined number of invariant core classes of defects;
a first counter for counting the number of defects in each of the core classes; and